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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,986	10/21/2003	Moshe Stark	2694/21	6900

7590

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DR. MARK FRIEDMAN LTD.

c/o Bill Polkinghorn

Discovery Dispatch

9003 Florin Way

Upper Marlboro, MD 20772

EXAMINER

SONG, JASMINE

ART UNIT

PAPER NUMBER

2188

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/688,986	<b>Applicant(s)</b> STARK ET AL.	
	<b>Examiner</b> Jasmine Song	<b>Art Unit</b> 2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-19, 22 and 24-47 is/are allowed.
- 6) ☒ Claim(s) 1-10, 20, 21 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/24/2003</u> . | 6) <input type="checkbox"/> Other: _____  |

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## **Detailed Action**

### **Specification**

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### **Drawings**

2. The drawings filed on 10/21/2003 have been approved by the Examiner.

### **Oath/Declaration**

3. The applicant's oath/declaration has been reviewed by the examiner and is found to conform to the requirements prescribed in 37 C.F.R. 1.63.

### **Information Disclosure Statement**

4. The information disclosure statement (IDS) submitted on 11/24/2003 is in compliance with the provisions of 37 CFR 1.97 except two foreign patent documents WO01/91132 and PCT/IL01/01025 (The applicant fails to provide the copy of two foreign patent document). Accordingly, the information disclosure statement (only US patent document) is being considered by the examiner.

### **Claim Rejections - 35 USC § 112**

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claims 3,10,20,21 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites the limitation "said range" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "said memory" in line 1. There is insufficient antecedent basis for this limitation in the claim. This claim should be depended on claim 9.

Claims 20-21 and 23 recite the limitation "said additional memory storage unit" in line 2. There is insufficient antecedent basis for this limitation in the claim.

### **Claim Rejections - 35 USC § 102**

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Zabarski et al., US 6,711,661 B1.

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Regarding claim 1, Zabarski et al teach an associative search engine (ASE) for data storage and retrieval, the associative search engine comprising:

(a) a search engine manager (SEM) (it is taught as a processor and comparator), disposed within a chip (as shown in Fig.1, search engine can be a separated chip), said search engine manager including:

(i) processing logic (it is taught as a processor 83);

(b) an external memory (it is taught as prefix memory module 11)

disposed outside of said chip (Fig.1), said memory including:

(i) at least a first array (it is taught as a trinary array of prefixes, col.3, lines 33-34) for storing a plurality of range boundary information (a plurality of range boundary information is taught as a plurality of trinary prefixes and each prefix being associated with a group of addresses reachable through the device, col.3, lines 49-51 and 59-61);

(c) at least a second array (it is taught as CAM 40) for storing a plurality of associated data entries (it is taught as a plurality of sorted binary string, col.3, lines 55-57), said data entries being associated with said range boundary information (col.3, lines 58-59), wherein said processing logic is designed and configured to search said range boundary information (it is taught as searching all binary strings in the CAM) in response to an input key (it is taught as a destination address), so as to determine (it is taught as the pointer is provided or not) if said input key falls within a range associated with a particular range boundary information (col.4, lines 5-9) of said range boundary information.

Regarding claim 2, Zabarski et al teach that the search engine manager has an internal memory disposed within said chip (it does not specifically teach an internal memory, but comparator 82 in the chip receives a plurality of strings which need a memory to store).

Regarding claim 3, Zabarski et al teach that said range is represented by a single boundary value (Fig.2).

Regarding claim 4, Zabarski et al teach that said external memory includes at least one random access memory (RAM) (Zabarski teaches external memory is a memory module which can be DRAMs).

Regarding claim 5, Zabarski et al teach that the system further comprising:  
(d) an interface (the buses between SEM and memory module, it does not show a control bus, but processor has to send out a command to process data) for interfacing between said external memory and said SEM (Fig.1).

Regarding claim 6, Zabarski et al teach that said interface includes at least one control & data bus (CDB) (col.4, lines 29-31).

Regarding claim 7, Zabarski et al teach that said second array having a plurality of rows and a plurality of columns (it is well known that CAM has a plurality of rows and a plurality columns).

Regarding claim 8, Zabarski et al teach that said second array is disposed in said external memory (it is well known that the second array CAM and the external memory module can be implemented in the same chip).

### **Claim Rejections - 35 USC § 103**

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zabarski et al., US 6,711,661 B1, in view of Sharma et al., US 6,766,317 B2.

Regarding claim 9, Zabarski the claimed invention as shown above, Zabarski does not teach a memory for storing range validity information for each of said range boundary information. However, Sharma teaches that a memory for storing range validity information for each of said range boundary information (it is taught as a range check cell stores the upper limit and lower limit of a specified range, col.1, lines 9-13).

It would have been obvious to the ordinary skill in the art at the time the invention was made to utilize the teachings of Sharma into Zabarski's memory system such as utilizing a memory for storing range validity information for each

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of said range boundary information because the stored range validity information for each range check cell will speed up the search without requiring extra silicon area (col.18, lines 9-22 of Sharma).

According, one of ordinary skill in the art would have recognized this and concluded that they are from the same field of endeavor (both references disclose the search algorithm in the CAM and both reference disclose the prefix match ect.). This would have motivated one of ordinary skill in the art to implement the above combination for the advantages set forth above.

Regarding claim 10, Sharma et al teach that said memory for storing range validity information is disposed within said external memory (it is taught as a SRAM cell is the storage of the data range).

### **Allowable Subject Matter**

11. Claims 11-19, 22 and 24-47 are allowed.

### **Conclusion**

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Melchior	6226710 B1
Kloth et al	6570877 B1



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13. When responding to the office action, Applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections. See 37 C.F.R. 1.111 (c).

14. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist examiner to locate the appropriate paragraphs.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jasmine Song whose telephone number is 571-272-4213. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on 571-272-4210. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Jasmine Song  
Patent Examiner



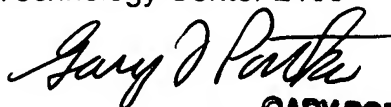
October 26, 2005

FOR

Mano Padmanabhan

Supervisory Patent Examiner

Technology Center 2100



**GARY PORTKA**  
**PRIMARY EXAMINER**